AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph no. 015 with the following amended paragraph:

The control system illustrated by way of example consists of four secondary control loops 20, 30, 40, 50 (for 4 rollers for a motor vehicle with 4 wheels), which are respectively used to control the speed of each individual roller 26, 36, 46, 56. Superimposed thereon is a control loop 10 that enables self-controlled operation, such that acceleration (stepping on the gas) or deceleration (braking) of the vehicle causes the roller speed to be adjusted.

Please replace the paragraph no. 016 with the following amended paragraph:

The four secondary control loops 20, 30, 40 50 are identified in the drawing figure by dash-dotted lines. The function is best described as follows, with the explanations starting at v_setpoint of secondary control loop 20 (the description of the other secondary control loops is similar):

1. The setpoint speed v_setpoint is constrained to stay between the maximum speed v_max and the minimum speed v_min. Typical values could be, for example 200 km/h and 30 km/h (or e.g. 125 mph and 20 mph).

2. The setpoint value is compared with the actual value --v_actual-- and the difference is formed in adder 21.

3. The controller 22 calculates a suitable torque M_brake to which M_addition is added in adder 23. M_addition compensates the acceleration -- M_ACCEL.-- of the

~~rollers~~ roller 26 and the friction-- M_FRICTION-- in the test bench. Initially, these are still digital computational values, not physical quantities.

4. The torque for all quadrants is limited to its maximum value, defined by the performance data of the converters and the motors, or by the given technology.

5. The resulting value is fed as a specified value to the converter 24 that supplies the motor 25. The motor 25 very accurately produces an actual, physically measurable torque --M_measured--. This torque can be made reproducible by calibration enabling feedback to a works standard.

6. The roller 26, with its own moment of inertia and the vehicle as a load, responds to the torque. The resulting speed (actual value) is measured --as v_actual--.

Please replace the paragraph no. 017 with the following amended paragraph:

The depicted superimposed control loop 10 (above the dash-dotted lines) is active only in the self-controlled mode --v_controlled-- (also: disconnected mode with switch position to v_test), which will be described in greater detail below. ~~This~~ --The v_controlled-- mode is activated by the switch 1, which toggles ~~allowing toggling~~ between v_controlled and v_test.

Please replace the paragraph no. 018 with the following amended paragraph:

In the position shown, the --v_controlled-- mode is active. As a result, the torques of all rollers are added in adder 11 and the acceleration that the vehicle would experience

under road conditions is simulated. The speed v_setpoint is then corrected by acceleration means ~~of the acceleration~~ 2 and is fed to the secondary control loops 20, 30, 40, 50 (within the dash-dotted lines). In detail, the system goes through the following steps:

1. The one or more vehicle tires attempt to change the absolute rotational speed because of an external influence J1, J2, J3, J4 (actuation of the gas pedal or the brake).

2. On the surface of the counterpart to the tire, a force is transmitted, and the speed controller 22, 32, 42, 52 subsequently detects a deviation between the setpoint and the actual value.

3. The speed controller 22, 32, 42, 52 tries to counteract this deviation (responds with a torque) and provides a correcting variable in the form of a torque (the sign -- positive or negative -- is a function of the sign of the deviation between the setpoint and the actual value).

4. The ~~braking~~ measured torque --M_measured-- is converted into a force using constant factors (in the specific case of the roller test bench using the radius of the rollers).

5. The axles to be taken into account are selected. Normally, these are all the axles.

6. The forces of all the axles are calculated by multipliers 16, 17, 18, 19 for each roller 26, 36, 46, 56, respectively, and are added in adder 11.

7. The total force F that accelerates or decelerates the vehicle is divided by the vehicle mass m in divider 12~~:~~. ~~the~~ The result is the acceleration that the vehicle would experience on the road if it were exposed to the calculated total force.

8. Multiplication with the sampling time T in multiplier 13 of the control loop gives the speed increment~~:~~, i.e., within the sampling time, the speed of the vehicle on the road would change by this amount.

9. The speed increment is added to the current setpoint speed in adder 14.

10. The new setpoint speed is used in the next sampling step. The secondary control loops are used to attempt to reach this new setpoint speed on all four rollers 26, 26, 46, 56.

Please replace the paragraph no. 019 with the following amended paragraph:

The superimposed control loop 10 (above the dash-dotted lines) can be disconnected. For this purpose, the switch 1 is switched from the --v_controlled-- position (as shown) to the v_test position.

Please replace the paragraph no. 020 with the following amended paragraph:

In the disconnected mode --v_test--, the speed of the four rollers 26, 36, 46, 56 is controlled according to the setpoint speed. A higher-level computer specifies a driving cycle with changing setpoint speeds. There is no feedback of the brake or acceleration forces to the setpoint speed. Operation in the disconnected mode is intended for tests that are known per se, namely the static brake test, the brake test at different speeds and the ABS test.